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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,854	07/16/2004	Gerardus Petrus Karman	NL020032US	4665

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EXAMINER

CHOWDHURY, TARIFUR RASHID

ART UNIT PAPER NUMBER

2871

DATE MAILED: 08/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/501,854	KARMAN ET AL.	
	Examiner	Art Unit	
	Tarifur R. Chowdhury	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05/1/5/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 5-9 is/are pending in the application.
- 4a) Of the above claim(s) 6-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Election/Restrictions

2. Newly submitted claims 6-9 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Species I: claims 1, 2 and 5;

Species II: claims 6-9.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 6-9 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the liquid crystal apparatus having plurality of stackable cells must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for

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consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Even though, throughout the disclosure applicant discloses the use of an optical cell having a combination of a cholesteric layer switchable between a cholesterically ordered wavelength-selectively reflective state and a transmissive state and a homeotropic orientation layer which is in direct contact with the cholesteric layer, applicant fails to disclose that plurality of such optical cells are stacked on top of another.

Further, since none of the drawings show such a liquid crystal apparatus comprising plurality of stackable optical cells, it appears that the newly amended claimed subject matter was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor(s), at the time of the application was filed, had possession of the claimed invention.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Lu et al., (Lu), USPAT 5,570,216.**

8. Lu discloses (col. 2, lines 42-53; col. 3, lines 29-31, 44-46, 54-55, 65-66; col. 5, lines 1-7) and shows in Fig. 1, a liquid crystal display comprising an optical cell wherein the cell comprising a pair of substrates (12 and 30) and a combination of a polymerized cholesteric layer switchable between a cholesterically ordered wavelength-selectively reflective state and a transmissive state and a homeotropic alignment layer (not shown) which is in direct contact with the cholesteric layer wherein the cholesteric layer is sandwiched between the homeotropic alignment layer and a planar alignment layer. Lu also discloses that depending on the type of display desired a plurality of the display can be stacked on top of each other if desired to provide a multicolor display (col. 5, lines 29-33)

Accordingly, claims 1-5 are anticipated.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takei, USPAT 5,726,729 in view of Lu.

11. Takei discloses (abstract; claim 1) and shows in Fig. 1, a liquid crystal display device comprising a pair of substrates (11 and 12) and a combination of a cholesteric layer switchable between a cholesterically ordered wavelength-selectively reflective state and a transmissive state and a homeotropic alignment layer (16) which is in direct contact with the cholesteric layer wherein the cholesteric layer is sandwiched between the homeotropic alignment layer and a planar alignment layer (17).

Takei differs from the claimed invention because he does not explicitly disclose the display having plurality of cells.

Lu discloses a liquid crystal display device having a combination of a polymerized cholesteric layer switchable between a cholesterically ordered wavelength-selectively reflective state and a transmissive state and a homeotropic alignment layer (not shown) which is in direct contact with the cholesteric layer wherein the cholesteric layer is sandwiched between the homeotropic alignment layer and a planar alignment layer. Lu also discloses that depending on the type of display desired a plurality of the display can be stacked on top of each other if desired to provide a multicolor display (col. 5, lines 29-33)

Lu is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use plurality of optical cells.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the display device of Takei by stacking plurality of cells on top of another to obtain a multicolor display.

Accordingly, claims 1-4 would have been obvious.

As to claim 5, Takei differs from the claimed invention because he does not explicitly disclose that the cholesteric layer is polymerized.

Lu discloses a liquid crystal display device having a polymerized cholesteric layer. He further discloses that using a polymerized cholesteric layer in a liquid crystal display device is advantageous since it enhances image contrast by providing an excellent transparent focal conic state (col. 1, line 66 – col. 2, line 14).

Lu is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use a polymerized cholesteric layer.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the display device of Takei by using a polymerized cholesteric layer for advantages such as to obtain a display that provides excellent transparent focal conic state and thus a high contrast, as per the teachings of Lu.

Accordingly, claim 5 would have been obvious.

12. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mash et al., (Mash), USPAT 4,114,990 in view of Lu.

13. Mash discloses (abstract; col. 1, line 66- col. 2, line 1; col. 2, lines 18-30; claim 1), a liquid crystal display device comprising a pair of substrates (11 and 12) and a combination of a cholesteric layer switchable between a cholesterically ordered wavelength-selectively reflective state and a transmissive state and a homeotropic alignment layer (not shown) which is in direct contact with the cholesteric layer wherein the cholesteric layer is sandwiched between the homeotropic alignment layer and a planar alignment layer.

Mash differs from the claimed invention because he does not explicitly disclose the display having plurality of cells.

Lu discloses a liquid crystal display device having a combination of a polymerized cholesteric layer switchable between a cholesterically ordered wavelength-selectively reflective state and a transmissive state and a homeotropic alignment layer

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(not shown) which is in direct contact with the cholesteric layer wherein the cholesteric layer is sandwiched between the homeotropic alignment layer and a planar alignment layer. Lu also discloses that depending on the type of display desired a plurality of the display can be stacked on top of each other if desired to provide a multicolor display (col. 5, lines 29-33)

Lu is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use plurality of optical cells.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the display device of Takei by stacking plurality of cells on top of another to obtain a multicolor display.

Accordingly, claims 1-4 would have been obvious.

As to claim 5, Mash differs from the claimed invention because they do not explicitly disclose that the cholesteric layer is polymerized.

Lu discloses a liquid crystal display device having a polymerized cholesteric layer. He further discloses that using a polymerized cholesteric layer in a liquid crystal display device is advantageous since it enhances image contrast by providing an excellent transparent focal conic state (col. 1, line 66 – col. 2, line 14).

Lu is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use a polymerized cholesteric layer.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the display device of Mash by using a polymerized cholesteric layer for advantages such as to obtain a display that provides

excellent transparent focal conic state and thus a high contrast, as per the teachings of Lu.

Accordingly, claim 5 would have been obvious.

Response to Arguments

14. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

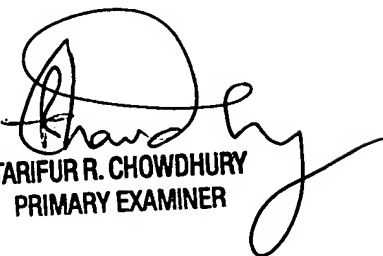
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R. Chowdhury whose telephone number is (571) 272-2287. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nelms C. David can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TRC
August 15, 2006


TARIFUR R. CHOWDHURY
PRIMARY EXAMINER